

Whitefish Lake Goes 3-D

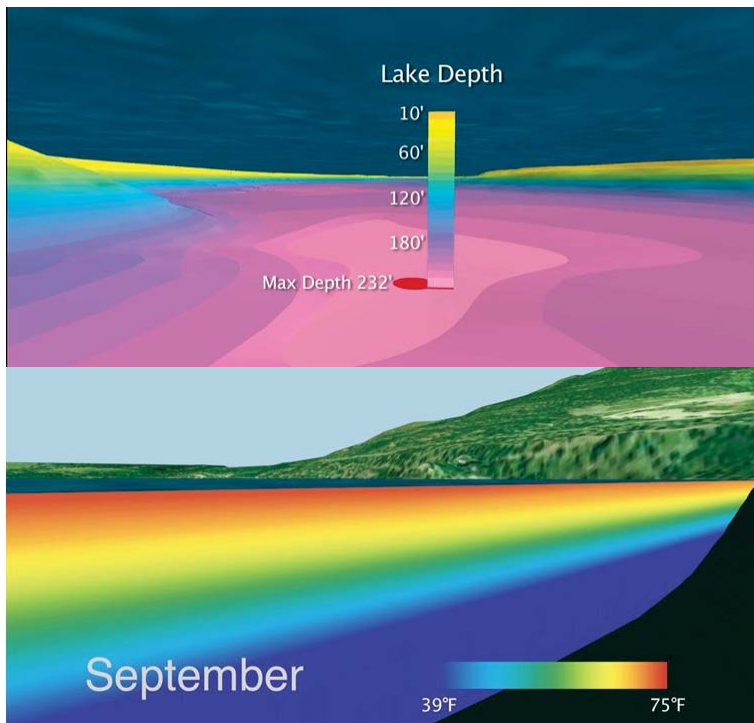
The Whitefish Lake Institute in partnership with OTB Designworks and Mobile Logistics Mapping of Whitefish, recently completed a collaborative project that brings Whitefish Lake to life through 3-D animation.

The animation is broken down into a flyover of the Whitefish area and a fly-through in the lake. In addition, an animation was produced showing the temperature changes in the lake during the course of a year, based upon WLI data from 2008.

The project began with taking two dimensional bathymetric data (topography of the lake floor) generously supplied by Constellation Services of Helena and converting the over 42,000 individual depth soundings to bathymetric lines using advanced computer software.

The bathymetric lines were connected together to form a 3D mesh that mimics the topography of the lake. For the surrounding area, six different satellite images were joined together.

The final steps included placing a panoramic sky hemisphere for the background and the text overlays, logos and credits. The animations will appear on the WLI website early next year.



Still images of the 3-D animations.

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*Protecting and improving the
Whitefish, Montana area
lake resources*

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Founded in 2005

The Whitefish Lake Institute is committed to acquiring scientific research and engaging the local citizenry to protect and improve the Whitefish area lake resources of today, while providing a collective vision for tomorrow.

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Still image of the 3-D animation of Whitefish Lake.



Save The Date

July 8-9, 2010

Whitefish will soon be home to a premier regional wine event. The inaugural Whitefish Wine Auction, a benefit to support the scientific and educational programs of the Whitefish Lake Institute, will be held July 8th and 9th at The Lodge at Whitefish Lake.

The event kicks off Thursday, when guests will have the opportunity to sample fine wines under the tent along Whitefish Lake while previewing the incredible auction lots in store for them on Friday. Friday evening's festivities get under way in the Ballroom of The Lodge at Whitefish Lake, with fine food and more select wines. There will be a Silent Auction followed by entertaining and tempting Live Auction. With special wine collections, adventures, and other exciting items to be auctioned, there certainly will be something to delight everyone.

Watch for the event website www.whitefishwineauction.org to launch in early 2010. Make your plans now to join us in a toast to Whitefish Lake and the work being conducted by WLI.

Frank Morrison, Jr. Scholarship Awarded

Mary Kohnstamm is the 2009 recipient of the Whitefish Lake Institute Frank Morrison, Jr. Scholarship. Mary was awarded \$500 towards her tuition, the proceeds coming from the Rock Drop Fundraiser.

Mary is a junior at St. Lawrence University, combining Environmental Studies and English majors as well as a minor in African studies. She is currently studying abroad in Kenya, and working with the Kenya Marine and Fisheries Research Institute for one month in a small coastal village focusing on mangrove restoration.

A Whitefish graduate, Mary was involved in F.R.E.E.F.L.O.W. throughout high school, participated in the Envirothon, and then interned with the Whitefish Lake Institute for parts of two summers. At St. Lawrence, she is the co-president of the Environmental Action Organization. EAO is the largest active club on campus, working with the school towards climate neutrality before 2020.

Mary says studying abroad has completely changed her perspective, especially seeing conflicts between human, wildlife and natural resources. She hopes to become a forester in the future and is currently thinking of a senior thesis idea. She says she is grateful for her experiences with Whitefish Lake Institute, and hopes to draw on that knowledge in Africa as she wades around in the mangrove swamps' red mud.



Work Begins in the Averill's Viking Creek Wetland Preserve

Phase 1 Trail Construction in the wetlands was completed in October.

Since WLI took title to 30 acres of wetlands this past summer, we have been busy with projects that benefit both the area and the public it will serve.

Phase 1 of the interpretive nature trail that highlights unique aspects of the area has been completed. The trail network has been designed to give the user a unique experience in "the woods" while not encroaching too far into the area where wildlife would be disturbed. Special thanks to Forestration of Whitefish for their professionalism in constructing Phase 1.



Bridge crossing over a swale.

Phase 2 of the trail development will occur next fall after proceeds from the Whitefish Wine Auction will go towards finishing the trail, two bridges and an elevated boardwalk segment. In addition, the interpretive signage will be developed and installed. The trail "grand-opening" will occur in the spring of 2011.



Proposed S.E. trailhead into the wetlands where the trail will lead into a mature aspen stand.

Restoration work in the wetlands this fall was completed by Watershed Consulting. The restoration effort focused on protecting native shrubs already growing in the area and initiating weed control.

The primary threat to native shrubs at the property is deer and moose browse. Plastic mesh cages were placed around approximately 1,100 plants to protect them from browse. Many of these plants are currently only about a foot tall, but they are probably several years old, having been browsed every year.

Approximately 270 spruce trees had already been planted in 2007. Spruce are slow-growing and may get overshadowed temporarily by the many native shrubs making a come-back, but the spruce will eventually dominate the area, returning it eventually to a wet spruce forest like that growing in the neighboring areas.

There are many different weed species growing on the property. Various forms of weed control were implemented this year including weed matting around native shrubs, placement of permeable woven fabric, and test plots for weed spraying an herbicide considered safe near water resources. Restoring canopy cover to open areas will be the most effective long-term solution to reducing the presence of noxious weeds.

Restoration efforts next year will focus on protecting additional native shrubs and weed control in wooded areas. Look for community weed pulling parties in the future to help restore and maintain the property.



A whitetail buck and a cow moose make their way through the wetlands.

Whitefish to Eureka Lake Volunteer Monitoring program

2009 was my first year as the Whitefish to Eureka Volunteer Water Monitoring Program coordinator. Volunteers were monitoring as early as May and thanks to the beautiful autumn weather, until October.

We added four new volunteers this summer; Randy Scott- Bootjack and Spencer Lakes, Debbie Rathburn-Lower Stillwater Lake, Scott Daniels-Beaver Lake and Derek Trotter-Glen Lake. The number of monitor outings was nearly double compared to 2008. We added two new monitoring parameters this summer, calcium and zooplankton sampling, which focused on Aquatic Invasive Species (AIS).

High calcium levels in waterways provide the ideal environment for Zebra and Quagga mussel infestation. Calcium, in the form of calcium carbonate, is necessary for the construction of the mussels bivalve shell. Zooplankton samples were collected and sent to the FWP lab in Helena for the possible presence of zebra mussel veligers. A veliger is the pre-adult stage of the zebra mussel and can only be identified on the microscopic level. In addition to the calcium and zooplankton sampling, volunteers were responsible to look for any sign of AIS such as Eurasian Milfoil, New Zealand Mudsail and Zebra or Quagga mussels.

There are waterways in Montana infested with

Eurasian Milfoil and New Zealand Mudsails while Zebra and Quagga mussels have yet to make their way into the state. Education and monitoring is essential to prevent the further spread of AIS.

I enjoyed working with all of the volunteers and being able to explore area lakes. In only our second year, we are building good trend data for the program lakes.

With continual efforts by our current and future volunteers, the program will continue to grow and be



Lower Stillwater Lake.

successful. I want to thank the 2009 volunteers for their participation and enthusiasm with the program. I also want to thank my supervisors John Wachsmuth (FWP) and Mike Koopal from the Whitefish Lake Institute. If anyone is interested in monitoring for summer 2010 there are still lakes that need volunteers. If interested you can contact kristen@whitefishlake.org or call the Whitefish Lake Institute at 862-4327. Thanks again for an awesome summer and I look forward to next year.

-Kristin Dolence

WLI Receives Whitefish Community Foundation Grants

The Whitefish Lake Institute is proud to announce that we received a grant from the Whitefish Community Foundation to purchase a new outboard motor for the research boat.

The new boat motor will be a fuel-efficient, low emission model that will replace the old Yamaha 25 horse that was always a bit undersized for the boat. The new motor will increase our overall efficiency and provide for the crews safety during inclement weather.

The research boat, donated in 2005 by Bill and Ruth Leonard, has served our research and educational programs on the lake well. This older model pontoon boat allows for a nice open platform to conduct our work. In 2006, Chris Ruffatto spearheaded the boat's retrofit and enlisted the help of industrial arts students from the high school.

Where will the old Yamaha motor go? We have plans for it to go on a smaller boat to expand our scientific services to smaller Whitefish area lakes like Blanchard Lake, where it is not feasible to use the pontoon boat. If you, or someone you know, has a smaller aluminum boat with a trailer that could be donated to WLI, give our office a call!

WLI also received operational support this year through the WCF donor advised funds. Special thanks to **The Kramer Family Fund, Big Mountain Fund and the Tom and Teresa Quinn Fund**. Your support keeps our doors open and makes our scientific and educational programs possible.

To learn more about the Whitefish Community Foundation, and to support their generous leadership in assisting local non-profits, go to www.whitefishcommunityfoundation.org.



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